Notice and Necessary Information

To be Completed by Preparers of Class B Biosolids

Facility Name: City of Watsonville Wastewater Treatment Plant **Monitoring Period** 8 / 01 / 14 **to** 9 / 30 / 14

1. Pollutant and Nitrogen concentrations (report results on 100% dry weight basis. Attach lab analyses).

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH_4-N	% solids
Result	6.7	3.4	510	15	1.0	15	24	7.1	830	23000	30000	16.7
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 8-14-14, 8-25-14

2. Class B Pathogen Reduction: (Check off and fill in applicable portion)

___ anaerobic digestion for _____ to _____days at ____ to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days
___ aerobic digestion for ____to ____ days at _____to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days
___ drying beds for ____to_____ months (attach records of dates in and out)
Class B: time > 3 months; 2 months > 0 degrees C
_X_ fecal coliform: geometric mean of seven samples = 10205 (attach lab results)
Class B: geometric mean of seven samples is < 2,000,000 mpn
___ lime stabilization: pH at 2 hours after addition = _____
Class B: pH 2 hours after addition of lime is ≥ 12

3. Vector Attraction Reduction:

_X_ Option 1: % VS_{in} = 75.8 % VS_{out} = 62.7 % VSR = 46.4%
VAR: VSR > 38%
____ Option 2/3: Bench scale test: % VSR = _____ after ____ days
VAR: additional VSR < 17% after 40 days(anaerobic), < 15% after 30 days (aerobic)
____ Option 4: SOUR = _____
VAR: SOUR < 1.5 mg O_2/hr/gram (dry weight)
____ Option 5: Composted _____ days at temps of _____ to _____degrees F/C (attach times/temps)
VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C
____ Option 6: time alkali added: _____ pH after 2 hours = ___ pH after 22 hours = ___
VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs
____ Option 7: % solids = _____ Stabilization method: _____
VAR: stabilized solids > 75%
____ Option 8: % solids = _____
VAR: unstabilized solids > 90%
____ Option 9/10: Applier will inject/incorporate within _____ hours
VAR: injection within 1 hour, incorporation within 6 hours

Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title: Barbara Pierson, Laboratory Manager

Phone: (831) 768-3179 **E-mail:** bpierson@ci.watsonville.ca.us

Signature: _____ **Date:** 8/12/15

BC Laboratories, Inc.
Environmental Testing Laboratory Since 1949

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 09/03/2014 16:04
Project: Bi-Monthly Biosolids
Project Number: Nutrient & Metals
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1419078-01 | **Client Sample Name:** 142437 WWTP Biosolids, 8/14/2014 1:50:00PM, B. Pierson, T.Nguyen, L. Rios, A. Avidano

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.63	7.63	pH Units	0.05	0.05	EPA-9040		pH1:3	1
pH Measurement Temperature	23.9	23.9	C	0.1	0.1	EPA-9040			1
Nitrate as N	2.4	0.40	mg/kg	1.0	0.26	EPA-300.0	ND	J	2
Total Kjeldahl Nitrogen	53000	8800	mg/kg	400	160	EPA-351.2	ND	A01	3
Ammonia as N	30000	5000	mg/kg	500	250	EPA-350.1	ND	A01	4
Total Phosphorus	30000	5000	mg/kg	200	86	EPA-365.4	ND	A01	5
Solids	100	16.7	%	0.05	0.05	SM-2540G			6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9040	08/21/14	08/21/14 14:30	DIW	MANUAL	1	BXH2107
2	EPA-300.0	08/26/14	08/27/14 13:25	TMS	IC1	1	BXH2493
3	EPA-351.2	08/28/14	08/29/14 10:43	JP1	SC-1	10	BXH2776
4	EPA-350.1	08/27/14	08/28/14 08:47	JP1	SC-1	50	BXH2631
5	EPA-365.4	08/28/14	08/28/14 16:27	JP1	SC-1	20	BXH2777
6	SM-2540G	08/22/14	08/22/14 11:05	RAC	MANUAL	1	BXH2495

organic Nitrogen = TKN - Ammonia

53,000 - 30,000 = 23,000

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 09/03/2014 16:04
Project: Bi-Monthly Biosolids
Project Number: Nutrient & Metals
Project Manager: Barbara Pierson

Total Concentrations (TTLC)

BCL Sample ID: 1419078-01 | **Client Sample Name:** 142437 WWTP Biosolids, 8/14/2014 1:50:00PM, B. Pierson, T.Nguyen, L. Rios, A. Avidano

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic	6.7	1.1	mg/kg	1.0	0.40	EPA-6010B	ND		1
Cadmium	3.4	0.56	mg/kg	0.50	0.052	EPA-6010B	ND		1
Chromium	77	13	mg/kg	0.50	0.050	EPA-6010B	ND		2
Copper	510	84	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	15	2.5	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury	1.0	0.17	mg/kg	0.16	0.036	EPA-7471A	ND		3
Molybdenum	15	2.5	mg/kg	2.5	0.050	EPA-6010B	ND		1
Nickel	24	3.9	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	7.1	1.2	mg/kg	1.0	0.98	EPA-6010B	ND		1
Zinc	830	140	mg/kg	2.5	0.087	EPA-6010B	0.30		1
Boron	18	3.0	mg/kg	5.0	0.50	EPA-6010B	ND	J	2
Potassium	1100	180	mg/kg	50	5.0	EPA-6010B	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	08/20/14	08/23/14 01:43	JRG	PE-OP1	0.943	BXH1875
2	EPA-6010B	08/20/14	08/21/14 16:24	ARD	PE-OP1	0.943	BXH1875
3	EPA-7471A	08/22/14	08/25/14 10:38	MEV	CETAC1	0.992	BXH2149

Notice and Necessary Information

To be Completed by Preparers of Class B Biosolids

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 10 / 01 / 14 to 11/ 30 / 14

1. Pollutant and Nitrogen concentrations (report results on 100% dry weight basis. Attach lab analyses).

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH_4-N	% solids
Result	8.7	1.9	440	11	1.1	12	31	ND	860	40000	11000	16.6
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 10-9-14, 10-27-14

2. Class B Pathogen Reduction: (Check off and fill in applicable portion)

___ anaerobic digestion for _____ to _____days at ____ to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days
___ aerobic digestion for ____to ____ days at _____to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days
___ drying beds for ____to_____ months (attach records of dates in and out)
Class B: time > 3 months; 2 months > 0 degrees C
_X_ fecal coliform: geometric mean of seven samples = 13477 (attach lab results)
Class B: geometric mean of seven samples is < 2,000,000 mpn
___ lime stabilization: pH at 2 hours after addition = _____
Class B: pH 2 hours after addition of lime is ≥ 12

3. Vector Attraction Reduction:

_X_ Option 1: % VS_{in} = 79.5 % VS_{out} = 60.75 % VSR = 60%
VAR: VSR > 38%
____ Option 2/3: Bench scale test: % VSR = _____ after ____ days
VAR: additional VSR < 17% after 40 days(anaerobic), < 15% after 30 days (aerobic)
____ Option 4: SOUR = _____
VAR: SOUR < 1.5 mg O_2/hr/gram (dry weight)
____ Option 5: Composted _____ days at temps of _____ to _____degrees F/C (attach times/temps)
VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C
____ Option 6: time alkali added: _____ pH after 2 hours = ___ pH after 22 hours = ___
VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs
____ Option 7: % solids = _____ Stabilization method: _____
VAR: stabilized solids > 75%
____ Option 8: % solids = _____
VAR: unstabilized solids > 90%
____ Option 9/10: Applier will inject/incorporate within _____ hours
VAR: injection within 1 hour, incorporation within 6 hours

Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title: Barbara Pierson, Laboratory Manager

Phone: (831) 768-3179 E-mail: bpierson@ci.watsonville.ca.us

Signature: Barbara Date: 8/12/15

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 11/04/2014 17:18
Project: Bi-Monthly Biosolids
Project Number: Nutrients and Metals
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1424368-01 | **Client Sample Name:** 142942 WWTP Biosolids, 10/9/2014 10:45:00AM, J. Camacho

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.88	7.88	pH Units	0.05	0.05	EPA-9040		pH1:1	1
pH Measurement Temperature	21.7	21.7	C	0.1	0.1	EPA-9040		pH1:3	1
Nitrate as N	4.0	0.66	mg/kg	1.0	0.26	EPA-300.0	ND	J	2
Total Kjeldahl Nitrogen	51000	8600	mg/kg	400	160	EPA-351.2	190	A01	3
Ammonia as N	11000	1800	mg/kg	200	100	EPA-350.1	ND	A01	4
Total Phosphorus	28000	4700	mg/kg	200	86	EPA-365.4	ND	A01	5
Solids	100	16.6	%	0.05	0.05	SM-2540G			6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9040	10/17/14	10/17/14 09:30	DIW	MANUAL	1	BXJ1638
2	EPA-300.0	10/16/14	10/16/14 21:41	OLH	IC5	1	BXJ1559
3	EPA-351.2	10/31/14	11/03/14 17:35	JP1	SC-1	10	BXJ2914
4	EPA-350.1	10/23/14	10/23/14 15:52	JP1	SC-1	19.608	BXJ2171
5	EPA-365.4	10/30/14	11/03/14 15:25	JP1	SC-1	20	BXJ2916
6	SM-2540G	10/20/14	10/20/14 14:25	RAC	MANUAL	1	BXJ1786

organic Nitrogen = TKN - Ammonia
= 51000 - 11000 = 40,000

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 11/04/2014 17:18
Project: Bi-Monthly Biosolids
Project Number: Nutrients and Metals
Project Manager: Barbara Pierson

Total Concentrations (TTLC)

BCL Sample ID: 1424368-01 | **Client Sample Name:** 142942 WWTP Biosolids, 10/9/2014 10:45:00AM, J. Camacho

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic	8.7	1.4	mg/kg	1.0	0.40	EPA-6010B	ND		1
Cadmium	1.9	0.32	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium	86	14	mg/kg	0.50	0.050	EPA-6010B	0.050		1
Copper	440	73	mg/kg	1.0	0.050	EPA-6010B	0.15		1
Lead	11	1.9	mg/kg	2.5	0.28	EPA-6010B	ND	J	1
Mercury	1.1	0.18	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum	12	1.9	mg/kg	2.5	0.050	EPA-6010B	0.15	J	1
Nickel	31	5.1	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	ND	ND	mg/kg	1.0	0.98	EPA-6010B	ND		3
Zinc	860	140	mg/kg	2.5	0.087	EPA-6010B	0.68		1
Boron	21	3.6	mg/kg	5.0	0.50	EPA-6010B	ND	J	1
Potassium	1100	180	mg/kg	50	5.0	EPA-6010B	7.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	10/21/14	10/23/14 00:09	SRM	PE-OP2	0.990	BXJ1939
2	EPA-7471A	10/17/14	10/17/14 14:11	MEV	CETAC1	0.992	BXJ1624
3	EPA-6010B	10/21/14	10/23/14 21:33	SRM	PE-OP2	0.990	BXJ1939

Notice and Necessary Information

To be Completed by Preparers of Class B Biosolids

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 12 / 01 / 14 to 01/ 31 / 15

1. Pollutant and Nitrogen concentrations (report results on 100% dry weight basis. Attach lab analyses).

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH_4-N	% solids
Result	4.1	2.8	510	21	1.7	12	33	8.7	1000	44100	7900	16.9
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 12/15/14, 12/17/14

2. Class B Pathogen Reduction: (Check off and fill in applicable portion)

___ anaerobic digestion for _____ to _____days at ____ to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days
___ aerobic digestion for ____to ____ days at _____to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days
___ drying beds for ____to_____ months (attach records of dates in and out)
Class B: time > 3 months; 2 months > 0 degrees C
X fecal coliform: geometric mean of seven samples = 4508 (attach lab results)
Class B: geometric mean of seven samples is < 2,000,000 mpn
___ lime stabilization: pH at 2 hours after addition = _____
Class B: pH 2 hours after addition of lime is ≥ 12

3. Vector Attraction Reduction:

X Option 1: % VS_{in} = 78.5 % VS_{out} = 62.2 % VSR = 60.8%
VAR: VSR > 38%
____ Option 2/3: Bench scale test: % VSR = _____ after ____ days
VAR: additional VSR < 17% after 40 days(anaerobic), < 15% after 30 days (aerobic)
____ Option 4: SOUR = _____
VAR: SOUR < 1.5 mg O_2/hr/gram (dry weight)
____ Option 5: Composted _____ days at temps of _____ to _____degrees F/C (attach times/temps)
VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C
____ Option 6: time alkali added: _____ pH after 2 hours = ___ pH after 22 hours = ___
VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs
____ Option 7: % solids = _____ Stabilization method: _____
VAR: stabilized solids > 75%
____ Option 8: % solids = _____
VAR: unstabilized solids > 90%
____ Option 9/10: Applier will inject/incorporate within _____ hours
VAR: injection within 1 hour, incorporation within 6 hours

Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title: Barbara Pierson, Laboratory Manager

Phone: (831) 768-3179 E-mail: bpierson@ci.watsonville.ca.us

Signature: Barbara P Date: 8/12/15

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 01/07/2015 22:51
Project: Bi-Monthly Biosolids
Project Number: [none]
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1430609-01 | **Client Sample Name:** WWTP Biosolids, 12/17/2014 10:23:00AM, E.McClaine

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.86	7.86	pH Units	0.05	0.05	EPA-9040		pH1:3	1
pH Measurement Temperature	19.5	19.5	C	0.1	0.1	EPA-9040			1
Total Kjeldahl Nitrogen	52000	8700	mg/kg	400	160	EPA-351.2	ND	A01	2
Ammonia as N	7900	1300	mg/kg	200	100	EPA-350.1	ND	A01	3
Total Phosphorus	30000	5100	mg/kg	200	86	EPA-365.4	90	A01	4
Solids	100	16.9	%	0.05	0.05	SM-2540G			5

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9040	12/29/14	12/29/14 12:15	DIW	MANUAL	1	BXL2604
2	EPA-351.2	12/26/14	12/30/14 09:06	JP1	SC-1	10	BXL2416
3	EPA-350.1	12/26/14	12/30/14 17:17	JP1	SC-1	19.231	BXL2410
4	EPA-365.4	12/26/14	12/29/14 10:35	JP1	SC-1	20	BXL2417
5	SM-2540G	12/26/14	12/26/14 14:30	RAC	MANUAL	1	BXL2426

organic Nitrogen = TKN - ammonia

52000 - 7900 = 44,100

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 01/07/2015 22:51
Project: Bi-Monthly Biosolids
Project Number: [none]
Project Manager: Barbara Pierson

Total Concentrations (TTLC)

BCL Sample ID: 1430609-01 | **Client Sample Name:** WWTP Biosolids, 12/17/2014 10:23:00AM, E.McClaine

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic	4.1	0.70	mg/kg	1.0	0.40	EPA-6010B	ND	J	1
Cadmium	2.8	0.47	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium	87	15	mg/kg	0.50	0.050	EPA-6010B	ND		1
Copper	510	85	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	21	3.5	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury	1.7	0.29	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum	12	2.1	mg/kg	2.5	0.050	EPA-6010B	0.052	J	1
Nickel	33	5.6	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	8.7	1.5	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	2.4	0.41	mg/kg	0.50	0.067	EPA-6010B	ND	J	1
Zinc	1000	170	mg/kg	2.5	0.087	EPA-6010B	0.16		1
Boron	38	6.5	mg/kg	5.0	0.50	EPA-6010B	0.99		1
Potassium	1300	210	mg/kg	50	5.0	EPA-6010B	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	12/23/14	12/24/14 10:12	ARD	PE-OP3	0.990	BXL2195
2	EPA-7471A	01/06/15	01/06/15 09:58	MEV	CETAC1	0.992	BYA0179

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 01/07/2015 22:51
Project: Bi-Monthly Biosolids
Project Number: [none]
Project Manager: Barbara Pierson

EPA Method 1664

BCL Sample ID: 1430609-01 | **Client Sample Name:** WWTP Biosolids, 12/17/2014 10:23:00AM, E.McClaine

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Oil and Grease	640	110	mg/kg	50	20	EPA-1664A HEM	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-1664A HEM	01/05/15	01/05/15 07:30	MAM	Inst	0.992	BYA0150

Notice and Necessary Information

To be Completed by Preparers of Class B Biosolids

Facility Name: City of Watsonville Wastewater Treatment Plant **Monitoring Period** 02 / 01 / 15 to 03/ 31 / 15

1. Pollutant and Nitrogen concentrations (report results on 100% dry weight basis. Attach lab analyses).

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH_4-N	% solids
Result	ND	3.0	520	19	1.1	10	27	ND	1000	41200	7800	17.9
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 2/26/15, 2/23/15

2. Class B Pathogen Reduction: (Check off and fill in applicable portion)

___ anaerobic digestion for _____ to _____days at ____ to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days

___ aerobic digestion for ____to ____ days at _____to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days

___ drying beds for ____to_____ months (attach records of dates in and out)
Class B: time > 3 months; 2 months > 0 degrees C

X fecal coliform: geometric mean of seven samples = 6884 (attach lab results)
Class B: geometric mean of seven samples is < 2,000,000 mpn

___ lime stabilization: pH at 2 hours after addition = _____
Class B: pH 2 hours after addition of lime is ≥ 12

3. Vector Attraction Reduction:

X Option 1: % VS_{in} = 78.5 % VS_{out} = 62.2 % VSR = 54.8%
VAR: VSR > 38%

____ Option 2/3: Bench scale test: % VSR = _____ after ____ days
VAR: additional VSR < 17% after 40 days(anaerobic), < 15% after 30 days (aerobic)

____ Option 4: SOUR = _____
VAR: SOUR < 1.5 mg O_2/hr/gram (dry weight)

____ Option 5: Composted _____ days at temps of _____ to _____degrees F/C (attach times/temps)
VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C

____ Option 6: time alkali added: _____ pH after 2 hours = ___ pH after 22 hours = ___
VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs

____ Option 7: % solids = _____ Stabilization method: _____
VAR: stabilized solids > 75%

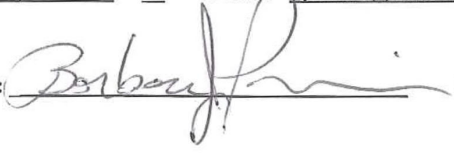
____ Option 8: % solids = _____
VAR: unstabilized solids > 90%

____ Option 9/10: Applier will inject/incorporate within _____ hours
VAR: injection within 1 hour, incorporation within 6 hours

Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title: Barbara Pierson, Laboratory Manager

Phone: (831) 768-3179 **E-mail:** bpierson@ci.watsonville.ca.us

Signature:  **Date:** 8/12/15

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 03/17/2015 12:59
Project: Bi-Monthly Biosolids
Project Number: Nutrients & Metals
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1505047-01 | **Client Sample Name:** 150535 WWTP Biosolids, 2/26/2015 10:00:00AM, J. Gonzalez

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.90	7.90	pH Units	0.05	0.05	EPA-9040		pH1:3	1
pH Measurement Temperature	21.5	21.5	C	0.1	0.1	EPA-9040			1
Nitrate as N	9.8	1.8	mg/kg	1.0	0.26	EPA-300.0	ND		2
Total Kjeldahl Nitrogen	49000	8700	mg/kg	800	320	EPA-351.2	ND		3
Ammonia as N	7800	1400	mg/kg	100	50	EPA-350.1	ND	A07	4
Total Phosphorus	26000	4700	mg/kg	200	76	EPA-365.4	ND	A07	5
Solids	100	17.9	%	0.05	0.05	SM-2540G			6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9040	03/06/15	03/06/15 10:45	DIW	MANUAL	1	BYC0589
2	EPA-300.0	03/10/15	03/10/15 22:28	BMW	IC8	1	BYC0879
3	EPA-351.2	03/06/15	03/09/15 12:49	JP1	SC-1	20	BYC0601
4	EPA-350.1	03/10/15	03/16/15 12:47	JP1	SC-1	10	BYC0914
5	EPA-365.4	03/06/15	03/09/15 08:56	JP1	SC-1	20	BYC0602
6	SM-2540G	03/04/15	03/04/15 14:40	RAC	MANUAL	1	BYC0370

Organic Nitrogen = TKN - Ammonia
= 49000 - 7800 = 41,200

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 03/17/2015 12:59
Project: Bi-Monthly Biosolids
Project Number: Nutrients & Metals
Project Manager: Barbara Pierson

Total Concentrations (TTLC)

BCL Sample ID: 1505047-01 | **Client Sample Name:** 150535 WWTP Biosolids, 2/26/2015 10:00:00AM, J. Gonzalez

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic	ND	ND	mg/kg	1.0	0.40	EPA-6010B	ND		1
Cadmium	3.0	0.53	mg/kg	0.50	0.052	EPA-6010B	ND		1
Chromium	82	15	mg/kg	0.50	0.050	EPA-6010B	ND		1
Copper	520	93	mg/kg	1.0	0.050	EPA-6010B	0.061		1
Lead	19	3.4	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury	1.1	0.20	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum	10	1.9	mg/kg	2.5	0.050	EPA-6010B	0.13	J	1
Nickel	27	4.9	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	ND	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	2.1	0.38	mg/kg	0.50	0.067	EPA-6010B	ND	J	1
Zinc	1000	180	mg/kg	2.5	0.087	EPA-6010B	0.62		1
Boron	21	3.8	mg/kg	5.0	0.50	EPA-6010B	ND	J	1
Sodium	1200	210	mg/kg	25	3.6	EPA-6010B	ND		1
Potassium	1200	210	mg/kg	50	5.0	EPA-6010B	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	03/05/15	03/06/15 12:06	JRG	PE-OP2	0.962	BYC0413
2	EPA-7471A	03/04/15	03/05/15 09:26	MEV	CETAC1	1.025	BYC0374

Notice and Necessary Information

To be Completed by Preparers of Class B Biosolids

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 4 / 01 / 15 to 5/ 31 / 15

1. Pollutant and Nitrogen concentrations (report results on 100% dry weight basis. Attach lab analyses).

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH_4-N	% solids
Result	5.2	3.2	460	19	1.5	10	28	15	920	48100	5900	16.6
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 4/20/15, 4/22/15

2. Class B Pathogen Reduction: (Check off and fill in applicable portion)

___ anaerobic digestion for _____ to _____days at ____ to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days
___ aerobic digestion for ____to ____ days at _____to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days
___ drying beds for ____to_____ months (attach records of dates in and out)
Class B: time > 3 months; 2 months > 0 degrees C
_X_ fecal coliform: geometric mean of seven samples = 662 (attach lab results)
Class B: geometric mean of seven samples is < 2,000,000 mpn
___ lime stabilization: pH at 2 hours after addition = _____
Class B: pH 2 hours after addition of lime is ≥ 12

3. Vector Attraction Reduction:

_X_ Option 1: % VS_{in} = 86 % VS_{out} = 58 % VSR = 77.4%
VAR: VSR > 38%
____ Option 2/3: Bench scale test: % VSR = _____ after ____ days
VAR: additional VSR < 17% after 40 days(anaerobic), < 15% after 30 days (aerobic)
____ Option 4: SOUR = _____
VAR: SOUR < 1.5 mg O_2/hr/gram (dry weight)
____ Option 5: Composted _____ days at temps of _____ to _____degrees F/C (attach times/temps)
VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C
____ Option 6: time alkali added: _____ pH after 2 hours = ___ pH after 22 hours = ___
VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs
____ Option 7: % solids = _____ Stabilization method: _____
VAR: stabilized solids > 75%
____ Option 8: % solids = _____
VAR: unstabilized solids > 90%
____ Option 9/10: Applier will inject/incorporate within _____ hours
VAR: injection within 1 hour, incorporation within 6 hours

Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title: Barbara Pierson, Laboratory Manager

Phone: (831) 768-3179 E-mail: bpierson@ci.watsonville.ca.us

Signature: _____ Date: 8/12/15

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 05/08/2015 11:54
Project: Bi-Monthly Biosolids
Project Number: Metals & Nutrients
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1509877-01 | **Client Sample Name:** WWTP Belt Press Biosolids, 4/22/2015 10:15:00AM, Barbara Pierson

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.64	7.64	pH Units	0.05	0.05	EPA-9040		pH1:3	1
pH Measurement Temperature	23.0	23.0	C	0.1	0.1	EPA-9040			1
Nitrate as N	12	2.0	mg/kg	1.0	0.26	EPA-300.0	ND		2
Total Kjeldahl Nitrogen	54000	8900	mg/kg	400	160	EPA-351.2	ND	A07	3
Ammonia as N	5900	980	mg/kg	200	100	EPA-350.1	ND	A07	4
Total Phosphorus	28000	4700	mg/kg	200	76	EPA-365.4	ND	A07	5
Solids	100	16.6	%	0.05	0.05	SM-2540G			6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9040	05/01/15	05/01/15 10:15	DIW	MANUAL	1	BYE0067
2	EPA-300.0	04/30/15	05/01/15 19:35	BMW	IC2	1	BYD2608
3	EPA-351.2	05/06/15	05/07/15 09:28	JMH	SC-1	10	BYE0477
4	EPA-350.1	05/01/15	05/02/15 09:37	JMH	SC-1	20	BYE0107
5	EPA-365.4	05/06/15	05/07/15 09:47	JMH	SC-1	20	BYE0478
6	SM-2540G	04/28/15	04/28/15 11:30	RAC	Inst	1	BYD2419

Org-N = TKN - Ammonia = 54000 - 5900 = 48100

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 05/08/2015 11:54
Project: Bi-Monthly Biosolids
Project Number: Metals & Nutrients
Project Manager: Barbara Pierson

Total Concentrations (TTLC)

BCL Sample ID: 1509877-01 | **Client Sample Name:** WWTP Belt Press Biosolids, 4/22/2015 10:15:00AM, Barbara Pierson

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic	5.2	0.87	mg/kg	1.0	0.40	EPA-6010B	ND	J	1
Cadmium	3.2	0.53	mg/kg	0.50	0.052	EPA-6010B	ND		1
Chromium	75	12	mg/kg	0.50	0.050	EPA-6010B	ND		1
Copper	460	76	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	19	3.2	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury	1.5	0.24	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum	10	1.7	mg/kg	2.5	0.050	EPA-6010B	0.082	J	1
Nickel	28	4.7	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	15	2.4	mg/kg	1.0	0.98	EPA-6010B	ND		1
Zinc	920	150	mg/kg	2.5	0.087	EPA-6010B	ND		1
Boron	49	8.1	mg/kg	5.0	0.50	EPA-6010B	ND		3
Potassium	1400	240	mg/kg	50	5.0	EPA-6010B	10		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	04/27/15	04/28/15 15:46	ARD	PE-OP3	0.943	BYD2310
2	EPA-7471A	04/28/15	04/28/15 16:06	MEV	CETAC1	1.025	BYD2380
3	EPA-6010B	04/27/15	04/29/15 14:08	ARD	PE-OP3	0.943	BYD2310

Notice and Necessary Information

To be Completed by Preparers of Class B Biosolids

Facility Name: City of Watsonville Wastewater Treatment Plant Monitoring Period 6 / 01 / 15 to 7/ 31 / 15

1. Pollutant and Nitrogen concentrations (report results on 100% dry weight basis. Attach lab analyses).

	As	Cd	Cu	Pb	Hg	Mo	Ni	Se	Zn	Org-N	NH_4-N	% solids
Result	5.2	3.2	460	19	1.5	10	28	15	920	48100	5900	16.6
Table 3	41	39	1500	300	17	na	420	100	2800	na	na	na
Table 1	75	85	4300	840	57	75	420	100	7500	na	na	na

Sampling date(s): 6/16/15, 6/29/15

2. Class B Pathogen Reduction: (Check off and fill in applicable portion)

___ anaerobic digestion for _____ to _____days at ____ to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 3(temp, degrees C) for times between 15 and 60 days
___ aerobic digestion for ____to ____ days at _____to ____ degrees F / C (range for past month)
Class B: time (days) ≥ 120 - 4(temp, degrees C) for times between 40 and 60 days
___ drying beds for ____to_____ months (attach records of dates in and out)
Class B: time > 3 months; 2 months > 0 degrees C
_X_ fecal coliform: geometric mean of seven samples = 15766 (attach lab results)
Class B: geometric mean of seven samples is < 2,000,000 mpn
___ lime stabilization: pH at 2 hours after addition = _____
Class B: pH 2 hours after addition of lime is ≥ 12

3. Vector Attraction Reduction:

_X_ Option 1: % VS_{in} = 77 % VS_{out} = 62 % VSR = 51.26%
VAR: VSR > 38%
____ Option 2/3: Bench scale test: % VSR = _____ after ____ days
VAR: additional VSR < 17% after 40 days(anaerobic), < 15% after 30 days (aerobic)
____ Option 4: SOUR = _____
VAR: SOUR < 1.5 mg O_2/hr/gram (dry weight)
____ Option 5: Composted _____ days at temps of _____ to _____degrees F/C (attach times/temps)
VAR: temp > 40 degrees C for 14 days, w/5 days > 45 degrees C
____ Option 6: time alkali added: _____ pH after 2 hours = ___ pH after 22 hours = ___
VAR: pH ≥ 12 for 2 hours after alkali addition, ≥ 11.5 for additional 22 hrs
____ Option 7: % solids = _____ Stabilization method: _____
VAR: stabilized solids > 75%
____ Option 8: % solids = _____
VAR: unstabilized solids > 90%
____ Option 9/10: Applier will inject/incorporate within _____ hours
VAR: injection within 1 hour, incorporation within 6 hours

Certification: I certify, under penalty of law, that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or the persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Name and Official Title: Barbara Pierson, Laboratory Manager

Phone: (831) 768-3179 E-mail: bpierson@ci.watsonville.ca.us

Signature: _____ Date: 8/12/15

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 07/06/2015 11:49
Project: Bi-Monthly Biosolids
Project Number: Nutrients & Metals
Project Manager: Barbara Pierson

Chemical Analysis

BCL Sample ID: 1514892-01 | **Client Sample Name:** WWTP Biosolids, 6/16/2015 12:45:00PM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
pH	7.44	7.44	pH Units	0.05	0.05	EPA-9040		pH1:1	1
pH Measurement Temperature	26.2	26.2	C	0.1	0.1	EPA-9040			1
Nitrate as N	9.9	1.5	mg/kg	1.0	0.26	EPA-300.0	ND		2
Total Kjeldahl Nitrogen	55000	8400	mg/kg	400	160	EPA-351.2	ND	A07	3
Ammonia as N	8000	1200	mg/kg	100	50	EPA-350.1	ND	A07	4
Total Phosphorus	35000	5300	mg/kg	200	76	EPA-365.4	ND	A07	5
Solids	100	15.3	%	0.05	0.05	SM-2540G			6

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9040	06/30/15	06/30/15 12:15	DIW	MANUAL	1	BYG0045
2	EPA-300.0	06/23/15	06/23/15 15:30	BMW	IC2	1	BYF2048
3	EPA-351.2	06/23/15	06/24/15 09:24	JMH	SC-1	10	BYF2074
4	EPA-350.1	06/23/15	06/24/15 14:25	JMH	SC-1	9.804	BYF2077
5	EPA-365.4	06/23/15	06/24/15 08:23	JMH	SC-1	20	BYF2110
6	SM-2540G	06/19/15	06/19/15 13:00	DIW	MANUAL	1	BYF1879

City of Watsonville
500 Clearwater Lane
Watsonville, CA 95077

Reported: 07/06/2015 11:49
Project: Bi-Monthly Biosolids
Project Number: Nutrients & Metals
Project Manager: Barbara Pierson

Total Concentrations (TTLC)

BCL Sample ID: 1514892-01 **Client Sample Name:** WWTP Biosolids, 6/16/2015 12:45:00PM

Constituent	Dry Basis Result	As Recvd Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic	3.0	0.46	mg/kg	1.0	0.40	EPA-6010B	ND	J	1
Cadmium	3.2	0.49	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium	86	13	mg/kg	0.50	0.050	EPA-6010B	ND		1
Copper	460	70	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	11	1.7	mg/kg	2.5	0.28	EPA-6010B	ND	J	1
Mercury	1.0	0.16	mg/kg	0.16	0.036	EPA-7471A	ND		2
Molybdenum	11	1.7	mg/kg	2.5	0.050	EPA-6010B	ND	J	1
Nickel	32	5.0	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	7.3	1.1	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	1.5	0.23	mg/kg	0.50	0.067	EPA-6010B	ND	J	1
Zinc	950	150	mg/kg	2.5	0.087	EPA-6010B	0.23		1
Boron	33	5.0	mg/kg	5.0	0.50	EPA-6010B	1.5		1
Sodium	1700	250	mg/kg	25	3.6	EPA-6010B	ND		1
Potassium	1400	210	mg/kg	50	5.0	EPA-6010B	ND		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	06/25/15	06/26/15 10:10	ARD	PE-OP3	0.926	BYF2343
2	EPA-7471A	06/25/15	06/25/15 13:33	MEV	CETAC1	1.008	BYF2330

City of Watsonville Utilities Laboratory

Pathogen Reduction Supporting Data
Fecal Coliform Monitoring

MPN/gram (dry weight)

Date Analyzed	8/25/2014	10/27/2014	12/15/2014	2/23/2015	4/20/2015	6/29/2015
Date Sampled	8/25/2014	10/27/2014	12/15/2014	2/23/2015	4/20/2015	6/29/2015
Sample						
1	27	2,843	4,255	1,352	27	125,581
2	2,205	24,876	5,159	2,222	66	35
3	62,035	29,762	17,341	12,429	199	49
4	360,000	12,865	11,258	46,700	6,214	196,629
5	22,124	71,823	8,280	26,341	3,977	126,984
6	53,254	14,118	709	8,247	1,196	221,311
7	7,303	2,941	1,504	1,934	5,476	203,488
Geometric Mean*	**10,205**	**13,477**	**4,508**	**6,884**	**662**	**15,766**

* To meet Class B Standards, samples must have <2,000,000 MPN/gram fecal coliform. All samples are well below this criteria.

Samples collected from 7 discrete locations on the drying bed at the Wastewater Treatment Facility
Sample analyzed on the same day they were collected by Utilities Department Laboratory Analyst